

HR-IXPSXPs High Performance Modular Wireless Bridge with Diversity Receive and Serial Over IP

Features

- ✓ Adds receive and transmit diversity antennas to standard HR-IXPSXP product
- ✓ Adds weatherproof serial over IP support.
- ✓ High Performance Intel® XScale® IXP Network Processor for near wire speed packet forwarding
- ✓ Ruggedized outdoor or compact indoor design
- ✓ Reliable and secure on-board flash for booting the HauteRoute OS™ operating system
- ✓ Simple to configure browser management interface
- ✓ Choice of radio modules supporting 900MHz at up to 700mW, 2.4Ghz at up to 400mW, 4.9 GHz 400mW or 5Ghz at up to 400mW
- ✓ 10/100 Base-TX Ethernet port (with auto MDI/MDIX)
- ✓ Full feature transparent bridging using the HauteLine™ high performance, low latency protocol for rates of up to 68Mbps actual throughput
- ✓ Passive Power Over Ethernet supporting 9 to 48VDC input voltage range. Reverse voltage and transient protection
- ✓ 6W typical operating power with radios at full power.
- ✓ 0°C to 70°C operating temperature
- ✓ 32Mbytes SDRAM
- ✓ Voltage and temperature monitor
- ✓ Watchdog timer
- ✓ Real Time Clock
- ✓ USB 2.0 host interface
- ✓ Serial Over IP using multicast support for control



Web Management Interface



Up to 68Mbps of actual TCP/IP throughput with full multicast support makes this the ideal bridge for surveillance, broadcast and VoIP applications

The HR-IXPSXPs Point to Point Modular Bridge is a complete, turn key solution for creating wireless broadband links between buildings, HDTV cameras or remote locations. Ideal for mobile applications where diversity antennas can compensate for motion and where remote control of serial devices is required.

Just attach any IP capable Ethernet device to its wired port and you can create a high performance wireless link at long distances with near line of sight or even non line of sight operation (depending on frequency used), with performance rivaling wired connections. Devices like MPEG/MJPEG video encoders, IP ready cameras, audio encoders, or VoIP PBXs can be connected directly to the HR-IXPSXP, extending their range and making them much more flexible.

The HR-IXPSXPs is built using a high performance network processor. It incorporates your choice of one radio module operating on either 900 MHz, 2.4, 4.9GHz, or 5 GHz bands. It uses HauteSpot Networks' high speed HauteLine™ protocol which delivers over twice the speed of other wireless solutions with no jitter and consistent delay variation.

The HR-IXPSXPs comes in two a small form factor enclosures, which allows for it to be placed in a variety of locations from camera tripod legs, to antenna towers, to neighborhood light posts, to an office building rooftop to the roof of a truck, rv or boat. The 10"x8"x3" NEMA 6 aluminum outdoor enclosure is waterproof, vandal resistant, easy to mount, and corrosion resistant. The 1"x4"x4" lightweight aluminum enclosure is perfect for mounting to cameras, worn in pocket belts, or attached to tripods. The outdoor model is the most rugged solution available on the market today, while the indoor model is extremely compact and lightweight.

The high performance hardware is paired with state of the art software specifically designed for simplicity of use and robustness of features. These elements combine to create a solution which is scalable, extensible, highly reliable, and very flexible.

The HR-IXPSXPs also comes with one 10/100 Base-TX Ethernet channel, two Female N type antenna ports, a weather proof RS232 serial port for serial over IP, 32Mbytes SDRAM, Power over Ethernet (PoE), watchdog timer and a voltage/temperature monitor. Program storage consists of 16Mbytes of on-board Flash which hosts the HauteRoute OS™ operating system.

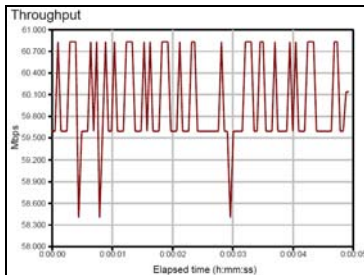
Software includes a complete embedded highly reliable operating system, and a feature rich wireless driver stack.

Processor Board Hardware Features:

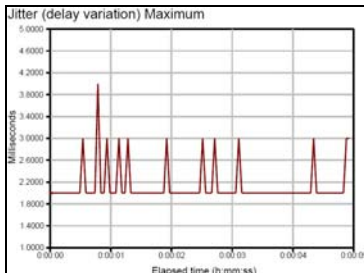
- Intel XScale IXP Network Processor
- 10/100 Base-TX Ethernet Ports (with Auto MDI/MDIX)
- 32Mbytes High Performance SDRAM
- On-board, non-removeable, secure flash storage
- 2 Type III Mini PCI Slots
- RS-232 Serial Management Port
- 5 Bits General Purpose Digital I/O
- Voltage/Temperature Monitor
- Watch-Dog Timer
- Serial EEPROM
- Wide Input Voltage (9 to 48VDC)
- Supports Power Over Ethernet (PoE)
- USB 2.0 Host Interface
- 0°C to 70°C Operating Temperature

Wireless Radio Features:

- 900 MHz, 2.4GHz, 4.9GHz and 5GHz operation using high performance HauteLine™ protocol
- Up to 68Mbps actual throughput using HauteLine™ protocol - Capable of handling heavy data payloads such as MPEG video streaming
- Up to 152-bit WEP data encryption with TKIP, WiFi Protected Access (64,128,152-WEP with TKIP)
- AES (Advanced Encryption Security) Support



Throughput Test Results For 60Mbps RTP stream



Jitter Variation for 60Mbps RTP stream

Ordering Information

HR-IXPSXPs – base system, no radio module

HR-IXPSXPs-9 – 900MHz point to point bridge

HR-IXPSXPs-2 – 2.4 GHz point to point bridge

HR-IXPSXPs-4 – 4.9 GHz point to point bridge (For sale to Law Enforcement or export only)

Electronic components warranted for 1 year.

High Performance Streaming

The HR-IXPSXPs is ideal for demanding streaming applications such as uni-cast, multi-cast or point to point RTP streaming, IPTV, and other related applications.

The HR-IXPSXPs uses a combination of a high performance embedded network processor, high gain/high performance radio modules available for either 900 MHz, 2.4 GHz or 5 GHz, the HauteRoute OS™ operating system which is optimized for high performance wireless devices like the HR-IXPSXPs, and the HauteLine™ high performance wireless protocol which is specifically designed for streaming media.

In real world testing, the HR-IXPSXPs, in a point to point bridge configuration, was able to achieve actual RTP stream throughput of 60Mbps with no data loss and no jitter on the 5 GHz band. Seven simultaneous RTP streams of 10Mbps were also tested and showed the same results: no jitter and no data loss.

The HR-IXPSXPs achieves these amazing results through the use of a non-blocking hardware architecture where the CPU, the wireless MAC/PHY, and the on-board system bus are all matched to one another. All elements of the architecture are balanced for maximum performance and throughput. The hardware is packaged in a rugged waterproof enclosure and is powered by 802.3af compliant Power Over Ethernet (PoE).

The hardware architecture is complimented by the HauteRoute OS™ firmware operating system which provides a stable, well tested environment which is optimized to the hardware platform and provides a set of simple Web management interfaces to users, allowing for simple installation and configuration.

Finally, the HauteLine™ wireless protocol, which is designed specifically to leverage the capabilities of the radio modules and HauteRoute OS™ operating system used in the HR-IXPSXP provides reliable, high performance throughput without jitter, data delay or packet loss.

Typical wireless applications using 802.11 or 802.16 protocols suffer from delay and stream interruption due to management overhead such as beaconing, polling and other functions. Management has been redesigned in the HauteLine™ protocol to not interrupt streaming.

The ability for the HR-IXPSXPs to operate on a variety of frequencies using the identical software and operating system means that customers can train their installers and operators once and deploy everywhere. 900 MHz operation allows for non-line-of-sight operations, 2.4 GHz allow for global operation without licensing, 4.9 GHz allows for use by Public Safety Agencies, and 5 GHz operation allows for maximum throughput with limited noise. A simple module change is all that is required to move bands.

With the ability to vary channel width from 5 to 10 to 20 to 40 MHz, point to multipoint users can scale from 6 to 20 channels, without overlap, depending on band, allowing for many remotes (feature available on certain models, call for details).

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